UPTAKE OF CROP INSURANCE IN THE FACE OF CLIMATE CHANGE

Lilian Kirimi, Eric Njue & Mary K. Mathenge

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OUTLINE

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Introduction

- Climate variability & change is the greatest challenge of our time:
  - Affects input use
  - Causes decline in soil productivity
  - Affects water and nutrient availability and utilization
  - Reduces crop growth & yields
  - Leads to crop failure and livestock mortality
  - Decreases resilience of households that depend on rain-fed agriculture

- Recent trends indicate increasing frequency and severity of weather related shocks
Introduction...

- Huge financial expenses in disaster response activities
  - 1999-2011, average annual spending on food and non-food emergency amounted to USD 173.2 million
- County governments are faced with many competing priorities; climate change skills/personnel remains a challenge
- Income diversification and crop insurance can reduce adverse effects of climate variability and change
Introduction...

- **General characteristics of insurance in Kenya**
  - Penetration estimated at 3% of GDP
  - Predominantly in motor, fire and personal accident (mainly group medical cover)
  - Only 7% of population has any form of insurance cover, mostly in formal sector

- **Agricultural insurance market in Kenya**
  - Statistics on uptake of agricultural insurance not clear; risk transfer instruments limited
  - Smallholders resort to risk minimization strategies
Introduction…

- Ag-Insurance Products

Agriculture Insurance Products

Indemnity-based Insurance
- MPCI (e.g. excess rain & floods)
- NPC (e.g. fire, frost, excess rain)
- Area Index (cover against yield & price risks)

Index-based Insurance
- Weather Index (weather parameters e.g. rainfall, temp) crops
- Satellite (NDVI) index (forage degradation/scarcity) livestock

Livestock
Rationale

- Very little success has been achieved to move pro-poor index insurance beyond the piloting phase (Cole *et al.*, 2012).

- Dearth of information with regard to the quality of indexed products (Jensen *et al.*, 2014).

- Need to understand the uptake of the pro-poor innovative index-based insurance products.
  - Factors affecting uptake of crop insurance are yet to be fully understood partly because of lack of sufficient data.
Objectives

- To establish the most important risks faced by maize producers and the coping mechanism applied
- To assess level of farmer awareness about crop insurance & information channels used
- To determine factors that influence insurance uptake decisions
Methodology

- **Study Area**
  - Embu & Laikipia counties
  - Selected due to availability of a significant number of insured farmers

- **Data**
  - 400 maize producing households in Embu and Laikipia counties interviewed
  - 240 insured & 160 un-insured

- **Insurance product**
  - Weather index-based insurance for maize

- **Empirical Method**
  - Descriptive statistics
  - Heckman 2-stage model to analyze insurance uptake decisions
RESULTS
Risk Sources and Trends

- Major causes of crop loss & damages

<table>
<thead>
<tr>
<th></th>
<th>Insured</th>
<th>Un-insured</th>
</tr>
</thead>
<tbody>
<tr>
<td>drought</td>
<td>37.3</td>
<td>40.7</td>
</tr>
<tr>
<td>pest and disease</td>
<td>32.4</td>
<td>35.9</td>
</tr>
<tr>
<td>excessive rainfall</td>
<td>13.8</td>
<td>11.3</td>
</tr>
<tr>
<td>frost</td>
<td>5.9</td>
<td>5.3</td>
</tr>
<tr>
<td>hailstones and storm</td>
<td>3.7</td>
<td>2.4</td>
</tr>
</tbody>
</table>

Source: Household Survey 2014
Risk Sources & Trends...

- Reported loss trends 2000-2014

Source: Household Survey 2014
Coping Mechanisms

- Coping mechanisms used by households

Source: Household Survey 2014
Awareness of crop insurance

- Percentage of non-insured that are aware of crop insurance
- Training vs uptake of insurance

Source: Household Survey 2014
Crop insurance information sources

Source: Household Survey 2014
## Insurance Uptake

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Uptake decision (Yes=1)</th>
<th>Intensity decision (premium in KES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aware of crop insurance (1=yes)</td>
<td>+***</td>
<td>+***</td>
</tr>
<tr>
<td>HH received insurance training (1=yes)</td>
<td>+***</td>
<td></td>
</tr>
<tr>
<td>Education level of HH head (years)</td>
<td></td>
<td>-*</td>
</tr>
<tr>
<td>Land allocated to maize (acres)</td>
<td>+**</td>
<td>+*</td>
</tr>
<tr>
<td>Distance to input market (km)</td>
<td>-</td>
<td>-***</td>
</tr>
<tr>
<td>Distance to weather station (km)</td>
<td>+**</td>
<td></td>
</tr>
<tr>
<td>Owns a savings account (1=yes)</td>
<td>+**</td>
<td></td>
</tr>
<tr>
<td>Exposure to drought</td>
<td></td>
<td>-*</td>
</tr>
<tr>
<td>Maize farming system (1=inter-crop, 0=pure-stand)</td>
<td></td>
<td>-**</td>
</tr>
<tr>
<td>Agro-potential region (1=medium, 0=low)</td>
<td>-*</td>
<td></td>
</tr>
</tbody>
</table>

*, ** & ***, represents significance levels at 10%, 5% and 1% respectively
Insurance uptake trends

% of households taking insurance by year

Source: Household Survey 2014
Reasons for non-participation

- **Reasons for non-uptake**
  - 49%: I did not understand how it works
  - 17%: Not available in this area
  - 20%: I did not need agricultural insurance
  - 14%: Expensive

- **Reasons for dropping-out of the insurance program**
  - 30%: Failed to be compensated
  - 27%: Didn't meet my expectations
  - 27%: Program ended
  - 16%: Not beneficial

Source: Household Survey 2014
Emerging Lessons

- Uptake levels are still low and declining
- Complexity of insurance concept among smallholder farmers is a major setback
- Knowledge dissemination on how crop insurance works is critical for its uptake
- Insurance marketing strategy is currently focusing mainly on formal channels
- Transparency in calculation of premium rates and compensation procedures not clear
- Decision to target crop enterprise to insure is not participatory
- Little/no involvement of county government organs
Way forward

- Develop different insurance products suitable for varying socio-economic conditions of farmers
  - Participatory approach should be used to tailor farmer specific insurance products while accelerating product acceptance by farmers
- Continued training on the importance of crop insurance as a factor of production
- Integrate crop insurance with other sustainable risk reduction and transfer measures
  - Acts as a twin strategy to reduce impact of the climate change on household livelihood
Way forward

- Government support to promote uptake through:
  - education campaigns
  - smart (targeted) subsidy programs for the poor & vulnerable
  - provision of relevant legislations that promote growth of micro-insurance sector
  - Investment in key infrastructure facilities to enable private sector to thrive in the agricultural insurance arena

- Bundling of crop insurance with other services like credit to encourage more farmers to buy crop insurance
  - Provision of multiple financial solutions to household needs
Thanks for Your Attention